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EUROPEAN PATENT APPLICATION

②① Application number: **79105153.5**

⑤① Int. Cl.³: **C 09 D 3/80**

②② Date of filing: **13.12.79**

③① Priority: **28.12.78 JP 164683/78**

④③ Date of publication of application:
09.07.80 Bulletin 80/14

⑥④ Designated Contracting States:
DE FR GB IT

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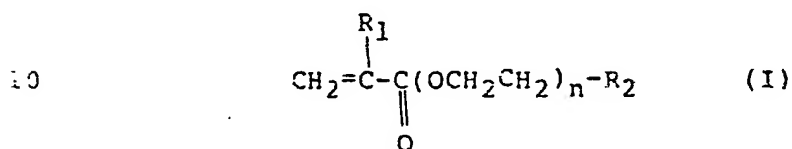
⑤④ Coating compositions, process for producing a cross-linked coating film with such compositions and thus produced articles.

⑤⑦ A coating composition comprising a polyfunctional monomer (a) having at least 3 (meth)acryloyloxy groups, a (meth)acrylic acid mono or diester of polyethyleneglycol (b), a sulfonic acid (c), a phosphoric acid ester (d), an ethanolamine (e), organic solvent, and a photosensitizer.

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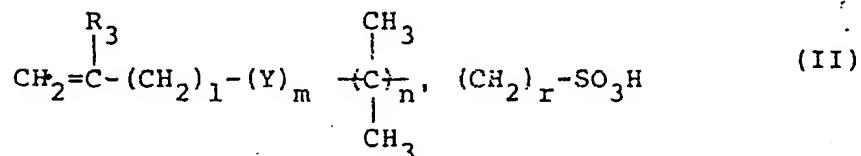
WHAT IS CLAIMED IS:

1. A coating composition comprising
- A. from about 5 to about 90 parts by weight of a monomer mixture which consists essentially of
- 5 (1) from about 20 to about 95% by weight of a polyfunctional monomer having at least three (meth)acryloyloxy groups in one molecule;
- (2) from about 1 to about 25% by weight of a monomer represented by the formula:



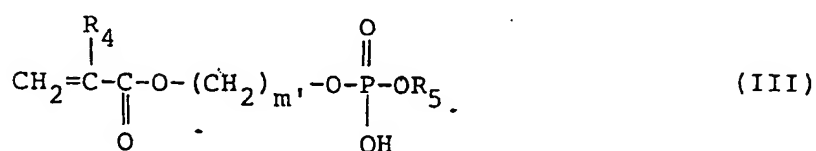
wherein R_1 is hydrogen or a methyl group, R_2 is an alkoxy or (meth)acryloyloxy group of 1 to 5 carbon atoms and n is an integer of 5 to 30;

- (3) from about 1 to about 15% by weight of a sulfonic acid type monomer represented by the formula:
- 15

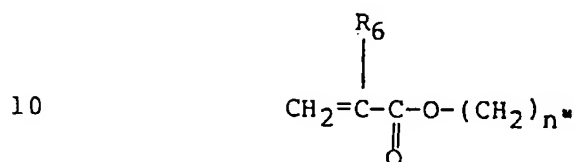


wherein R_3 is hydrogen or a methyl group, Y is a -CONH or -COO group and l, m, n' and r are integers of 0 to 5);

- (4) from about 1 to about 20% by weight of a phosphoric acid ester-type monomer represented by the formula:

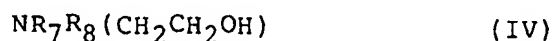


wherein R_4 is hydrogen or a methyl group, R_5 is hydrogen or a



group, R_6 is hydrogen or a methyl group and m' and n'' are integers of 1 to 15; and

- (5) from about 2 to about 20% by weight of an ethanolamine-type compound represented by the formula:



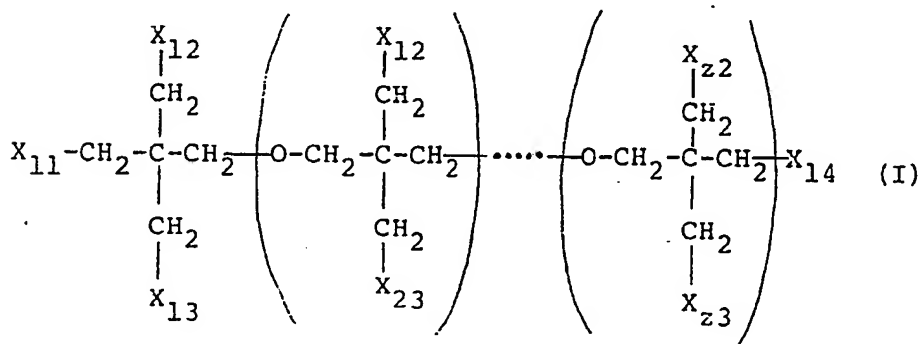
wherein each of R_7 and R_8 is independently hydrogen or an alkyl group of 1 to 15 carbon atoms or a $\text{CH}_2\text{CH}_2\text{OH}$ group; together with

- B. from about 95 to about 10 parts by weight of at least one organic solvent that forms a uniform solution when mixed with said monomer mixture A; and

C. up to 10 parts by weight of a photo-sensitizing agent per 100 parts by weight of the total of the monomer mixture A and organic solvent B;

said coating composition capable of forming a dyeable, cross-linked hardened film high in abrasion resistance, surface smoothness and cloud prevention, said film having a permanent antistaticity when irradiated with active energy rays.

2. The coating composition according to claim 1 wherein said polyfunctional monomer (1) is a polypentaerythritol poly(meth)acrylate having at least three (meth)acryloyloxy groups per molecule and represented by the formula:



wherein at least 3 of X_{11} , X_{12} , X_{13} , X_{22} , X_{23} , X_{z2} , X_{z3} and X_{14} are (meth)acryloyloxy groups and the rest are OH groups and z is an integer of 1 to 5.

3. The coating composition according to claims 1 or 3 wherein polyfunctional monomer (1) is present in an amount of from about 40 to about 90% by weight of monomer mixture A.

4. The coating composition according to claim 1 wherein low viscosity monomers having a boiling point of not less than about 150°C. under atmospheric pressure and a viscosity not greater than
5 20 centipoises is used together with the polyfunctional monomer (1).

5. The coating composition according to claims 1 or 2 wherein said sulfonic acid-type monomer (3) is present in an amount of from about 5 to about 10% by weight of monomer mixture A.

6. The coating composition according to claims 1 or 2 wherein said phosphoric acid ester-type monomer is selected from the group consisting of
(meth)acryloxyethyl phosphate, di(meth)acryloxyethyl
5 phosphate, (meth)acryloxypropyl phosphate, (meth)-acryloxybutyl phosphate and mixtures thereof.

7. The coating composition according to claims 1 or 2 wherein said ethanolamine-type compound (5) is present in an amount of from about 5 to about 15% of monomer mixture A.

8. The coating composition according to claims 1, 2 or 7 wherein said ethanolamine-type compound (5) is selected from the group consisting of ethanolamine, beta-ethylhexylethanolamine, diethanol-
5 amine, N-butyldiethanolamine, N-hexyldiethanolamine, N-lauryldiethanolamine, N-cetyldiethanolamine, triethanolamine and mixtures thereof.